CV3

## IMPACT OF CARVEDILOL ON INPATIENT RESOURCE USE AND COSTS IN HEART FAILURE

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**OBJECTIVE:** To examine the impact of carvedilol on the utilization and cost of inpatient care in patients with chronic heart failure. **METHODS:** A health-economic evaluation of carvedilol was undertaken in conjunction with the US Carvedilol Heart Failure Trials Program, in which 1094 patients with NYHA Class II–IV heart failure were randomized to treatment with carvedilol or placebo (696 and 398 respectively) as an adjunct to conventional therapy (digitalis, diuretics, ACE inhibitors). Patients were treated for up to 15 months (mean = 6.5 months). Measures of interest included the numbers of hospitalizations, days spent in special-care units and in hospital overall, the utilization of selected cardiovascular procedures, and the cost of cardiovascular-related inpatient care. Resource utilization data were collected for all hospitalizations occurring between randomization and the end of follow-up. Costs were estimated based on observed levels of resource use and secondary data sources. **RESULTS:** The mean number of heart failure admissions was 53% lower among patients randomized to carvedilol (0.07 vs 0.15 for placebo [$P = 0.03$]); comparable reductions for cardiovascular and all-cause admissions were 30% (0.21 vs 0.30 [$P = 0.02$]) and 25% (0.30 vs 0.40 [$P = 0.003$]) respectively. For heart failure admissions, mean length of stay and the mean number of ICU/CCU days were reduced by 37% (6.8 vs 10.8 days [$P = 0.03$]) and 83% (0.7 vs 4.3 [$P = 0.001$]) respectively; for cardiovascular admissions, comparable reductions were 32% (7.4 vs 10.8 days [$P = 0.30$]) and 73% (1.5 vs 5.6 [$P = 0.05$]) respectively. Utilization of selected cardiovascular procedures was also nominally lower among patients receiving carvedilol. Estimated costs of inpatient care for heart failure and cardiovascular admissions were 81% ($P = 0.02$) and 57% ($P = 0.02$) lower respectively among carvedilol patients. **CONCLUSION:** In chronic heart failure patients receiving conventional therapy, addition of carvedilol reduced inpatient resource utilization and costs over the period of study.

# INFECTIOUS DISEASE

ID1

## MODELLING THE COSTS AND EFFECTS OF CMV MANAGEMENT STRATEGIES IN TRANSPLANT RECIPIENTS AS A SUPPORT FOR CURRENT AND FUTURE DECISION-MAKING

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**OBJECTIVES:** We developed a generic decision analytical model to predict health and economic outcomes of different management options for cytomegalovirus (CMV) infection and disease in bone marrow and solid organ transplant patients. **METHODS:** The model considers the most prevalent management strategies, thereby emphasizing the important difference between "infection" and "disease": 1°. prophylaxis and testing for infection, followed by pre-emption in case of infection; 2°. only testing for infection followed by pre-emption in case of infection; and 3°. wait, and treat once disease occurs. Clinical data was obtained from randomised controlled studies. A Bayesian analysis was applied to distinguish effectiveness of current management options for CMV infection versus CMV disease, an aspect that is currently underreported in literature. For each of the three strategies and in each transplant type, different management options and resource use data was obtained from key experts in large transplant centres in France, Germany, and the UK. Unit cost data was obtained from official sources from the health care payer's perspective. Time horizon was one year. **RESULTS:** The model produces results for a variety of scenarios and management options. In general, prophylaxis is cost-effective in BMT (16,000 Euro/LYG; SE = 6,900) and dominant in liver transplants compared to alternative strategies, while in renal transplants, test and pre-empt is more preferable. Some particular current strategies such as acyclovir IV prophylaxis in bone marrow and IV immune globulin prophylaxis in renal transplants are not supported by the results. Sensitivity analyses show at the same time the robustness of current conclusions and the potential options for disease management. **CONCLUSIONS:** This model provides an exhaustive description of management options for CMV in transplant patients, and is useful both in current decision-making for optimal disease management, as well as in the assessment of future targets for research.

ID2

## COST-EFFECTIVENESS ANALYSIS OF HEXAVALENT MENINGOCOCCAL B OUTER-MEMBRANE-VESICLE VACCINE

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**OBJECTIVE:** To estimate the cost-effectiveness and program costs of vaccination with hexavalent meningococcal B outer-membrane-vesicle (OMV) vaccine within the framework of the Dutch vaccination program for newborns. **METHODS:** A pharmacoeconomic decision-analysis model was applied, linking epidemiological and economic data. Epidemiological data were obtained from